

Warm-up.

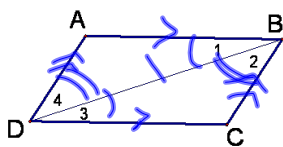
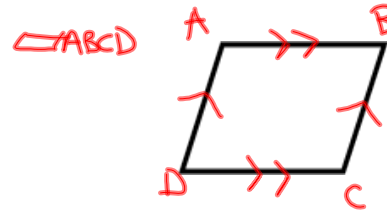
1. $n=17$

Find the sum of the interior angles.

 2700° 2. Each interior angle of a regular polygon measures 160° . How many sides are on the polygon? 18 sides

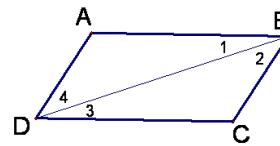
8-2 Parallelograms

Parallelogram-quadrilateral with both pairs of opposite sides parallel



Given: $\square ABCD$
 Prove: $\overline{AB} \cong \overline{CD}$
 $\overline{AD} \cong \overline{BC}$

Statements	Reasons
① $\square ABCD$	① Given
② $\overline{AD} \parallel \overline{BC}; \overline{AB} \parallel \overline{DC}$	② Def. of \square
③ $\angle 1 \cong \angle 3; \angle 2 \cong \angle 4$	③ Alt. Int. \angle s thm
④ $\overline{BD} \cong \overline{BD}$	④ Refl.
⑤ $\triangle ABD \cong \triangle CDB$	⑤ ASA
⑥ $\overline{AB} \cong \overline{CD}; \overline{AD} \cong \overline{BC}$	⑥ CPCTC



Given: $\square ABCD$
 Prove: $\angle A \cong \angle C$

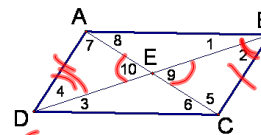
Theorem 8.3-Opposite sides of a parallelogram are congruent



Theorem 8.4-Opposite angles of a parallelogram are congruent



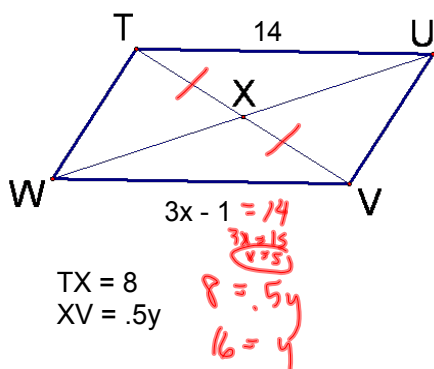
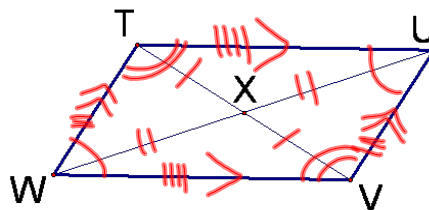
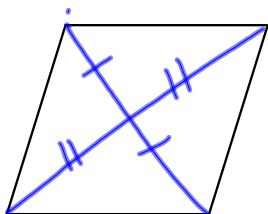
Theorem 8.5-Consecutive angles of a parallelogram are supplementary



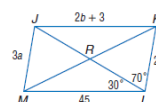
Given: $\square ABCD$
 Prove: $\overline{AE} \cong \overline{CE}$
 $\overline{DE} \cong \overline{BE}$

S.	R.
① $\square ABCD$	① Given
② $\angle 10 \cong \angle 9$	② Vert \angle s \cong
③ $\overline{AD} \cong \overline{BC}$	③ Opp sides \square are \cong
④ $\overline{AD} \parallel \overline{BC}$	④ Def. of \square
⑤ $\angle 4 \cong \angle 2$	⑤ Alt. Int. \angle s thm
⑥ $\triangle AED \cong \triangle CEB$	⑥ AAS
⑦ $\overline{AE} \cong \overline{CE}; \overline{DE} \cong \overline{BE}$	⑦ CPCTC

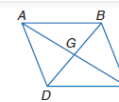
Theorem 8.6-Diagonals of a parallelogram bisect each other

Use $\square JKLM$ to find each measure or value if $JK = 2b + 3$ and $JM = 3a$.

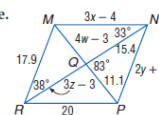
- | | |
|------------------|-------------------|
| 7. $m\angle MJK$ | 8. $m\angle JML$ |
| 9. $m\angle JKL$ | 10. $m\angle KJL$ |
| 11. a | 12. b |

Complete each statement about $\square ABCD$. Justify your answer.

- | | |
|---------------------------------|-----------------------------|
| 16. $\angle DAB \cong ?$ | 17. $\angle ABD \cong ?$ |
| 18. $\overline{AB} \parallel ?$ | 19. $\overline{BG} \cong ?$ |
| 20. $\triangle ABD \cong ?$ | 21. $\angle ACD \cong ?$ |

ALGEBRA Use $\square MNPR$ to find each measure or value.

- | | |
|-------------------|-------------------|
| 22. $m\angle MNP$ | 23. $m\angle NRP$ |
| 24. $m\angle RNP$ | 25. $m\angle RMN$ |
| 26. $m\angle MQN$ | 27. $m\angle MQR$ |
| 28. x | 29. y |
| 30. w | 31. z |



Find the point where the diagonals intersect.

ABCD is a parallelogram

A(5, -3) B(3, 5) C(-2, 7) D(0, -1)

Find the midpoint of 1 diagonal.

$$\overline{AC} \quad M\left(\frac{5+(-2)}{2}, \frac{-3+7}{2}\right) = \left(\frac{3}{2}, 2\right)$$

HW

p. 518-519
 3-16, 23-28,
 33-36